Section 2. PILOT WEATHER REPORT(UA/UUA)

9-2-1. GENERAL

Pilot Weather Reports (PIREP's) are filed at unscheduled times with stations having sending capability to WMSCR for dissemination on the Service A domestic aviation weather system. These reports shall be entered into the system as individual reports, not appended to a surface observation. Entry shall only be between H+00 and H+55.

9-2-2. PREPARATION FOR TRANSMISSION

a. M1FC entry, use WY mask. (See para 4-2-4.)

b. AIS entry, use /D procedures.

9-2-3. RESPONSIBILITY

FSS specialists shall actively solicit PIREP's in conjunction with preflight and inflight communications with pilots and assure timely dissemination of the PIREP information. Each facility should make special efforts to obtain PIREP's on departure and arrival weather conditions at airports within their flight plan area.

9-2-4. PIREP DISPLAY

Maintain a PIREP display to conform with the particular requirements of your facility. If it is posted for internal use only, symbology may be used at the facility's discretion. If it is displayed as a pilot self-briefing aid, the use of contractions, such as OVC, shall be applicable.

9-2-5. SOLICITING PIREP'S

a. Solicit PIREP's for the affected area(s) when one or more of the following weather conditions exist, are reported, or forecast to occur:

1. Ceilings at or below 5,000 feet.

2. Visibility reported on the surface or aloft is 5 miles or less.

3. Thunderstorms and related phenomenon.

4. Turbulence of moderate degree or greater.

5. Icing of light degree or greater.

6. Wind shear.

7. Volcanic ash clouds are reported or forecast.

NOTE-
Pilots may forward PIREP's regarding volcanic activity using the format described in the Volcanic Activity Reporting Form (VAR) as depicted in the Aeronautical Information Manual, Appendix 2.

b. Also, solicit PIREP's regardless of weather conditions when:

1. An NWS or ATC facility indicates a need because of a specific weather or flight assistance situation.

2. Necessary to determine flying conditions pertinent to natural hazards (mountain passes, ridges, peaks) between the weather reporting stations.

3. The station is designated as responsible for PIREP's in an offshore coastal area.

c. Flight watch specialists shall solicit sufficient PIREP's to remain aware of flight conditions.

d. To solicit PIREP's within a specific area, broadcast a request on NAVAID's, transcribed broadcast facilities, or a selected communications frequency.

PHRASEOLOGY-
PILOT WEATHER REPORTS ARE REQUESTED (location/area). CONTACT (name) RADIO/FLIGHT WATCH ON (frequency) TO REPORT THESE CONDITIONS.

9-2-6. RECORDING OF PIREP DATA

Record PIREP data directly into M1FC, or on FAA Form 7110-2, or on other material deemed appropriate; e.g., 5" x 8" plain paper.

9-2-7. DATA TO BE INCLUDED IN PIREP'S

Include the following reports of flight conditions, as appropriate:

a. Height and coverage of cloud bases, tops, and layers.

b. Flight visibility.

c. Restrictions to visibility and weather occurring at altitude.

d. Air temperature and changes to temperature with altitude or range.

e. Direction and speed of wind aloft.

f. Extent and intensity of turbulence.

REFERENCE-
Para 9-2-8.

g. Extent, type, and intensity of icing.

REFERENCE-
Para 9-2-9.

h. Weather conditions and cloud cover through mountain passes and over ridges and peaks.

i. Location, extent, and movement of thunderstorms and/or tornadic activity.

j. Excessive winds aloft, LLWS, and other phenomena bearing on safety and efficiency of flight.

9-2-8. REPORTING TURBULENCE IN PIREP'S

a. Turbulence reports should include location, altitude, or range of altitudes, and aircraft type, and should include whether in clouds or clear air. The degree of turbulence, intensity, and duration (occasional, intermittent, and continuous) is determined by the pilot. It is essential that the report is obtained and disseminated when possible in conformance with the U.S. Standard Turbulence Criteria Table as follows:

1. Light. Loose objects in aircraft remain at rest.

2. Moderate. Unsecured objects are dislodged. Occupants feel definite strains against seat belts and shoulder straps.

3. Severe. Occupants thrown violently against seat belts. Momentary loss of aircraft control. Unsecured objects tossed about.

4. Extreme. Aircraft is tossed violently about, impossible to control. May cause structural damage.

b. Report CAT or CHOP if used by the pilot to describe the type of turbulence.

9-2-9. REPORTING ICING CONDITIONS IN PIREP'S

a. Icing reports shall include location, altitude or range of altitudes, type aircraft, air temperature, intensity, and type of icing.

b. Icing types.

1. Rime. Rough, milky, opaque ice formed by the instantaneous freezing of small super-cooled water droplets.

2. Clear. A glossy, clear or translucent ice formed by the relatively slow freezing of large super-cooled water droplets.

3. Mixed. A combination of rime and clear.

c. Icing intensity.

1. Trace. Ice becomes perceptible. Rate of accumulation slightly greater than sublimation. Deicing/anti-icing equipment is not utilized unless encountered for an extended period of time (over 1 hour).

2. Light. The rate of accumulation may create a problem if flight is prolonged in this environment (over 1 hour). Occasional use of deicing/anti-icing equipment removes/ prevents accumulation. It does not present a problem if deicing/anti-icing is used.

3. Moderate. The rate of accumulation is such that even short encounters become potentially hazardous, and use of deicing/anti-icing equipment or diversion is necessary.

4. Severe. The rate of accumulation is such that deicing/anti-icing equipment fails to reduce or control the hazard. Immediate diversion is necessary.

9-2-10. MEANS USED TO SOLICIT PIREP'S

Inform pilots of a need for PIREP's. The following methods may be used to collect PIREP's:

a. During preflight weather briefings.

b. On post-flight contacts.

c. During regular air-ground contacts.

d. Broadcast a request on NAVAID frequencies.

e. Append a request on HIWAS, TIBS, VOR-TWEB, or TWEB broadcasts.

f. Request PIREP's from air carrier and military operations offices, military pilot-to-forecaster units, and local aircraft operators.

g. Solicit from other air traffic facilities.

9-2-11. PIREP CLASSIFICATION

Categorize PIREP's as follows:

a. URGENT. The following weather phenomena shall be classified as an URGENT (UUA) PIREP:

1. Tornadoes, funnel clouds, or waterspouts.

2. Severe or extreme turbulence (including clear air turbulence).

3. Severe icing.

4. Hail.

5. Low level wind shear. Classify LLWS PIREP's as UUA if the pilot reports air speed fluctuations of 10 knots or more. Classify reports of LLWS with air speed fluctuations less than 10 knots as routine. If air speed fluctuation is not reported, classify PIREP as UUA.

NOTE-
LLWS defined as windshear within 2,000 feet of the surface.

6. Volcanic ash clouds.

7. Any other weather phenomena reported which are considered by the specialist as being hazardous, or potentially hazardous, to flight operations.

b. ROUTINE. Classify as ROUTINE (UA) all PIREP's received except those listed above.

9-2-12. PIREP HANDLING

Upon receipt of a PIREP, accomplish the following:

a. Urgent.

1. Deliver to the ARTCC Weather Coordinator as soon as possible.

2. Deliver to the associated WSO as soon as possible.

3. Enter on Service A at the first opportunity.

4. Use in weather briefings, as appropriate.

b. Routine.

1. Transmit on Service A as soon as practical.

2. Broadcast in accordance with established procedures in Chapter 2.

3. Use in weather briefings, as appropriate.

9-2-13. OFFSHORE COASTAL ROUTES

When your station has been given responsibility for collecting offshore coastal route PIREP's:

a. Include the coastal water area when soliciting PIREP's. At least one PIREP is required hourly regardless of weather conditions.

b. Pacific. Hawaiian Island station areas coincide with the Honolulu ARTCC sectors and the entire Hawaiian area is designated as offshore areas for PIREP purposes.

NOTE-
The AT division assigns PIREP responsibility for an offshore coastal area, route, or route segment to a specific station. The area assigned will be within the same ARTCC area as

the station, and the station shall have adequate air-ground communications coverage over its assigned offshore area.

9-2-14. PIREP PREPARATION

To assure proper dissemination of PIREP's to all system users, the encoding procedures listed below shall be followed:

a. Identify each element by a Text Element Indicator (TEI).

b. Ensure each report includes TEI's for message type, location, time, altitude/flight level, type aircraft, and at least one other to describe the reported phenomena.

c. Precede each TEI, except message type, with a space and a solidus (/).

d. Follow each TEI, except altitude/flight level, with a space.

e. Insert zeros in reported values when the number of digits in the report is less than the number required by the format.

f. Use only authorized aircraft designators and contractions.

g. In the location TEI, include any three-letter identifier to describe locations or routes.

h. Omit entries of TEI's, except as listed in subpara 9-2-14b, for which no data was reported.

9-2-15. PIREP FORMAT

Using TEI's as described below, prepare PIREP's for system entry in the following format:

a. UUA or UA. Message type – Urgent or Routine PIREP.

b. /OV.

1. Location in reference to a VHF NAVAID or an airport, using the three or four letter identifier. If appropriate, encode the identifier, then three digits to define a radial and three digits to define the distance in nautical miles.

EXAMPLE-
/OV KJFK
/OV KJFK107080
/OV KFMG233016/RM RNO 10SW

2. Route segment. Two or more fixes, as in subparas 9-2-15b1 and b2 examples, to describe a route.

EXAMPLE-
/OV KSTL-KMKC
/OV KSTL090030-KMKC045015

c. /TM. Time that the reported phenomenon occurred or was encountered. Report time in four digits UTC.

EXAMPLE-
/TM 1315

d. /FL. Altitude/flight level. Enter the altitude in hundreds of feet (MSL) where the phenomenon was first encountered. If not known, enter UNKN. If the aircraft was climbing or descending, enter the appropriate contraction (DURGC or DURGD) in the remarks/ RM TEI. If the condition was encountered within a layer, enter the altitude range within the appropriate TEI describing the condition.

EXAMPLE-
/FL093
/FL310
/FLUNKN /RM DURGC

e. /TP. Type aircraft. Enter aircraft type. If not known, enter UNKN. Icing and turbulence reports shall always include the type aircraft.

EXAMPLE-
/TP AEST
/TP B74A
/TP P28R
/TP UNKN

f. /SK. Sky condition. Report height of cloud bases, tops, and cloud coverage as follows:

1. Enter the height of the base of a layer of clouds in hundreds of feet (MSL). Enter the top of a layer in hundreds of feet (MSL) preceded by the word "-TOP." If reported as clear above the highest cloud layer, enter "SKC" following the reported level.

EXAMPLE-
/SK OVC100-TOP110/ SKC
/SK OVC015-TOP035/OVC230
/SK OVC-TOP085

2. Use authorized contractions for cloud cover.

EXAMPLE-
BKN
FEW
OVC
SCT
SKC

3. Cloud cover amount ranges will be entered with a hyphen and no spaces separating the amounts; i.e., BKN-OVC.

EXAMPLE-
/SK SCT-BKN050-TOP100
/SK BKN-OVCUNKN-TOP060/BKN120-TOP150/ SKC

4. Unknown heights are indicated by the contraction UNKN.

EXAMPLE-
/SK OVC065-TOPUNKN

5. If a pilot indicates he/she is in the clouds, enter IMC.

EXAMPLE-
/SK OVC065-TOPUNKN /RM IMC

6. When more than one layer is reported, separate layers by a solidus (/).

g. /WX. Flight visibility and flight weather. Report weather conditions encountered by the pilot as follows:

1. Flight visibility, if reported, will be the first entry in the /WX field. Enter as FV followed by a two-digit visibility value rounded down, if necessary, to the nearest whole statute mile and append "SM" (FV03SM). If visibility is reported as unrestricted, enter FV99SM.

2. Enter flight weather types using one or more of the standard surface weather reporting symbols contained in TBL 9-2-1.

Weather type and symbols

Type	METAR Code
Drifting / Blowing Snow	DRSN/BLSN
Drifting Dust	DRDU
Drifting Sand	DRSA
Drizzle/Freezing Drizzle	DZ/FZDZ
Dust / Blowing Dust	DU/BLDU
Duststorm	DS
Fog (vis < 5/8SM)	FG
Freezing Fog	FZFG
Freezing Rain	FZRA
Funnel Cloud	FC
Hail (aprx 1/4" dia or more)	GR
Hail Shower	SHGR
Haze	HZ
Ice Crystals	IC
Ice Pellets/ Showers	PL/SHPL
Mist (vis > 5/8SM)	BR
Patchy Fog	BCFG
Patchy Fog on part of Arpt	PRFG
Rain / Showers	RA/SHRA
Sand / Blowing Sand	SA/BLSA
Sandstorms	SS
Shallow Fog	MIFG
Sml Hail/Snow Pellet Showers	SHGS
Sml Hail/Snow Pellets	GS

Smoke	FU
Snow Grains	SG
Snow / Showers	SN/SHSN
Spray	PY
Squalls	SQ
Thunderstorm	TS
Tornado/Waterspout	+FC
Unknown Precipitation	UP
Volcanic Ash	VA
Well developed Dust/Sand Whirls ...	PO

TBL 9-2-1

3. Intensity of precipitation (- for light, no qualifier for moderate, and + for heavy) shall be indicated with precipitation types, except ice crystals and hail, including those associated with a thunderstorm and those of a showery nature.

4. Intensity of obscurations shall be ascribed as moderate or + heavy for dust and sand storms only. No intensity for blowing dust, blowing sand, or blowing snow.

EXAMPLE-
/WX FV01SM +DS000-TOP083/SKC /RM DURGC

5. When more than one form of precipitation is combined in the report, the dominant type shall be reported first.

EXAMPLE-
/WX FV00SM +TSRAGR
/WX FV02SM BRHZ000-TOP083

6. When FC is entered in /WX, FUNNEL CLOUD is spelled out on /RM. When +FC is entered in /WX, TORNADO or WATERSPOUT is spelled out in the /RM TEI.

EXAMPLE-
/WX FC /RM FUNNEL CLOUD
/WX +FC /RM TORNADO or WATERSPOUT

7. When the size of hail is stated, enter in 1/4" increments in remarks /RM TEI.

8. The proximity qualifier VC (Vicinity) is only used with TS, FG, FC, +FC, SH, PO, BLDU, BLSA, and BLSN.

EXAMPLE-
/WX FV02SM BLDU000-TOP083 VC W

9. When more than one type of weather is reported enter in the following order: 1) TORNADO, WATERSPOUT, OR FUNNEL CLOUD; 2) Thunderstorm with or without associated precipitation; 3) Weather phenomena in order of decreasing predominance. No more than three groups in a single PIREP.

10. Weather layers shall be entered with the base and/or top of the layer when reported. Use the same format as in the /SK TEI.

EXAMPLE-
/WX FU002-TOP030

h. /TA. Air Temperature. Report outside air temperature using two digits in degrees Celsius. Prefix negative temperatures with an M; e.g., /TA 08 or /TA M08.

i. /WV. Wind direction and speed. Encode using three digits to indicate wind direction (magnetic) and two or three digits to indicate reported wind speed. When the reported speed is less than 10 Kts use a leading zero. The wind group will always have "KT" appended.

EXAMPLE-
/WV 28080KT
/WV 28008KT
/WV 280105KT

j. /TB. Turbulence. Report intensity, type, and altitude as follows:

1. Intensity. Enter duration if reported by the pilot (intermittent, occasional continuous) and intensity using contractions LGT, MOD, SEV, or EXTRM. Separate a range or variation of intensity with a hyphen; e.g., MOD-SEV. If turbulence was forecasted, but not encountered, enter NEG.

2. Type. Enter CAT or CHOP if reported by the pilot.

3. Altitude. Report altitude only if it differs from value reported in /FL. When a layer of turbulence is reported, separate height values with a hyphen. If lower or upper limits are not defined, use BLO or ABV.

EXAMPLE-
/TB LGT 040
/TB MOD-SEV BLO 080
/TB MOD-SEV CAT 350
/TB NEG 120-180
/TB MOD CHOP 220/NEG 230-280
/TB MOD CAT ABV 290

k. IC. Icing. Report intensity, type and altitude of icing as follows:

1. Intensity. Enter intensity first using contractions TRACE, LGT, MOD, or SEV. Separate reports of a range or variation of intensity with a hyphen. If icing was forecast but not encountered, enter NEG.

2. Type. Enter the reported icing type as RIME, CLR, or MX.

3. Altitude. Enter the reported icing/altitude only if different from the value reported in the /FL TEI. Use a hyphen to separate reported layers of icing. Use ABV or BLO when a layer is not defined.

EXAMPLE-
/IC LGT-MOD MX 085
/IC LGT RIME
/IC MOD RIME BLO 095
/IC SEV CLR 035-062

4. When icing is reported always report temperature in the /TA TEI.

l. **/RM.** Remarks. Use this TEI to report a phenomenon which is considered important but does not fit in any of the other TEI's. This includes, but is not limited to, low level wind shear (LLWS) reports, thunderstorm lines, coverage and movement, size of hail (1/4" increments), lightning, clouds observed but not encountered, geographical or local description of where the phenomenon occurred, and contrails. Report hazardous weather first. Describe LLWS to the extent possible.

1. Wind Shear. +/- 10 Kts or more fluctuations in wind speed, within 2,000 Ft of the surface, require an Urgent (UUA) pilot report. When Low Level Wind Shear is entered in a pilot report enter LLWS as the first remark in the /RM TEI. LLWS may be reported as -, +, or +/- depending on how it effects the aircraft. If the location is different than the /OV or /FL fields, include the location in the remarks.

EXAMPLE-
/RM LLWS +/-15 KT SFC-008 DURGC RY22 JFK

2. FUNNEL CLOUD, TORNADO, and WATERSPOUT are entered with the direction of movement if reported.

EXAMPLE-
/RM TORNADO E MOV E

3. Thunderstorm. Enter coverage (ISOL, FEW, SCT, NMRS) and description (LN,BKN LN,SLD LN) if reported. Follow with "TS," the location and movement, and the type of lightning if reported.

EXAMPLE-
/RM NMRS TS S MOV E GR1/2

4. Lightning. Enter frequency (OCNL, FRQ), followed by type (LTGIC, LTGCC, LTGCG, LTGCA, or combinations), if reported.

EXAMPLE-
/RM OCNL LTGICCG

5. Electric Discharge. Enter DISCHARGE followed by the altitude.

EXAMPLE-
/RM DISCHARGE 120

6. Clouds. Use remarks when clouds can be seen but were not encountered and reported in /SK.

EXAMPLE-
/RM CB E MOV N
/RM OVC BLO

7. Plain Language. If specific phraseology is not adequate use plain language to describe the phenomena or local geographic locations. Include remarks that do not fit in other TEI's like DURGC, DURGD, RCA, TOP, TOC, or CONTRAILS.

EXAMPLE-
/RM BUMPY VERY ROUGH RIDE
/RM CONTRAILS
/UA/OV BIS270030/TM 1445/FL060/TP CVLT/TB LGT /RM Donner Summit Pass

8. Volcanic Eruption. Volcanic Ash alone is an Urgent PIREP. A report of volcanic activity shall include as much information as possible. Include name of the mountain, ash cloud and movement, height of the top and bottom of the ash, etc. If received from other than a pilot, enter Aircraft "UNKN," Flight Level "UNKN," and /RM UNOFFICIAL.

EXAMPLE-
UUA/OV ANC240075/TM 2110/FL370/TP DC10/WX VA/ RM VOLCANIC ERUPTION 2008Z MT AUGUSTINE ASH 40S MOV SSE

9-2-16. PIREP ENCODING

PIREP's shall be coded to ensure the PIREP is stored and subsequently distributed with the surface observation location nearest the condition being reported. If more than one SA location is appropriate, select the location that provides the greatest distribution and/or prominence, such as a major hub airport.

9-2-17. PIREP ORDER

Prepare PIREP's by routes from the reported location to an adjacent location, if possible. Start a multiple PIREP transmission with the most northerly route and progress clockwise. Place each PIREP on a separate line.

EXAMPLE-
UA/OV MRB045030/TM 1645/FL060
/TP UNKN /SK OVC055
UA/OV MRB-DCA/TM 1630/FL090/TP
AEST /RM BTWN LYRS 090
UA/OV MRB-EKN/TM 1640/FL060/TP
P28R /SK BKN-OVC020-TOP040/RM
RDGS OBSCD